



Title: MANDATORY BEARING INSPECTION/RECALL

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Revision: **1**

Technical Portions are FAA DER Approved.

1.0 SCOPE AND APPLICATION: Engine Components Inc. (ECi®) considers this Service Bulletin to be Mandatory to ensure continued airworthiness for Lycoming reciprocating engines with crankshaft bearings Part Number (P/N) AEL13884 STD that are marked with Rev. G and lot code “CH” and P/N AEL11021 STD and M003 that are marked with Rev. F and Lot Code “DH” and connecting rod bearings Part No. AEL13521 STD that are marked Rev. D and Lot Code “DH”.

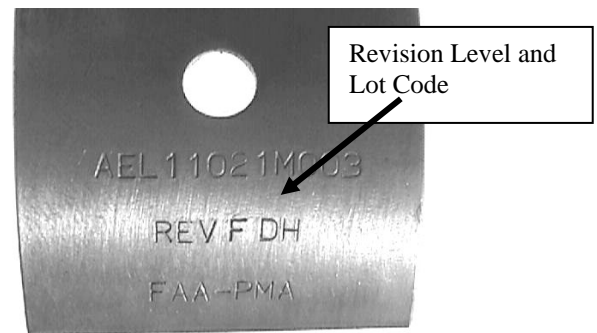
2.0 BACKGROUND: ECi has received two engine sets of AEL11021 M003 main bearings and AEL13521 STD connecting rod bearings that exhibited abnormal displacement of the overlay during break-in in a test cell. The condition of the bearings indicates that the thin overlay (approximately 0.0007 inches thick) on the inner surface of the bearings partially delaminated. The problem was discovered by the observance of flakes in the engine oil filter after break-in was completed. The delaminating was confined to portions of the bearing overlay, and the underlying bearing lining was not affected. The overlay is a plated layer of tin and lead, with a very thin nickel layer plated between the leaded bronze bearing lining and the overlay. This overlay is relatively soft, and is designed to provide a wear-in layer to rapidly conform the bearing to the crankshaft main and rod journals.

This Mandatory Service Bulletin alerts you, an owner or operator of a Lycoming aircraft piston engine that has been rebuilt between June 1, 2004 and September 17, 2004 using main bearings P/N AEL13884 STD, AEL11021 STD or M003 and/or AEL13521 (STD), or to operators or suppliers that have these bearings in stock, that ECi has determined that a small number of bearings produced and shipped to ECi in June of 2004 may have minor defects that cannot be ascertained by visual or microscopic examination. **NOTE: ALL AFFECTED BEARINGS ARE MARKED WITH LOT CODE “CH” FOR AEL13884 AND “DH” FOR THE OTHER AFFECTED BEARINGS.**

We have determined that this problem is limited, and if it exists in the bearings, will identify itself by small metallic flakes that can be seen in the engine oil screen or oil filter. **Field experience and testing indicate that even if the overlay is displaced, the bearing will continue to perform its intended function and this condition should not present a safety of flight concern.**

3.0 REQUIRED ACTION:

- Determine if any AEL13884 STD Rev. G, AEL11021 STD or M003 Rev. F or AEL13521 STD Rev. D replacement bearings for Lycoming engines have been purchased from ECi since June 1, 2004. The bearings may be further identified by the lot code stamped on the back of the bearing halves as shown in the photograph at the right and on the next page. The Rev. level and Lot Code are also stamped on the label affixed to the box in which the bearings are packaged.





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2. If AEL13884 STD, AEL11021 STD or M003 or AEL13521 STD bearings have been purchased from ECi since June 1, 2004 and not installed in an engine, and if the bearings are marked with Lot Code “CH” or “DH”, return these bearings to ECi for credit or replacement.

3. If AEL13884 STD, AEL11021 Std. & M003 or AEL13521 Std. bearings have been purchased from ECi between June 1, 2004 and September 17, 2004 and are installed in an engine, the engine oil screen and oil filter should be carefully checked by examining for excessive metal flakes as detailed in *Lycoming Service Bulletin Number 480D*. Further, if a significant number of flakes are found, check to see if they are magnetic. A nickel layer under the overlay will make the bearing overlay flakes magnetic. If the flakes are not magnetic, then they are from another source.

4. If an abnormal amount of magnetic metallic flakes are found at one of the first three oil changes, then contact your ECi Customer Service Area Representative at 1-800-ECi-2FLY (800-324-2359) for guidance.

5. If there is no evidence of excessive metallic flakes, no further action is required.

